Instructions
E44 - Wet Cooling Tower

Assume PM-filterable = PM10-filterable = PM2.5-filterable.

Emission Calculation Method:

Facilities may use the default emission factors with Equation 1 to estimate PM-filterable emissions. Alternatively, facilities may use Equation 2 to estimate the PM-filterable emissions if the required site specific parameters are available.

Emissions (tons/year) = Q x EF x OD x 0.0005 tons/lb (Equation 1)

Where:

Q = Cooling tower circulating water rate, 1000 gallons/day

EF = Use 0.019 lbs PM-filterable/1000 gallons/day as default value if uncontrolled or if control status is unknown, per AP-42, Section 13.4, Table 13.4-1. Use 0.0048 lb PM-filterable/1000 gallons if controlled by a mist eliminator.

OD = Annual operating days in emissions year

Alternative Emission Calculation Method:

Facilities may also use Equation 2 (if the site-specific parameters are available) to estimate the PM_{10}-filterable emissions. Please include the emission calculations that were used to determine the actual PM_{10}-filterable emissions.

$Emissions\ (tons/year) = V \times 60 \times OH \times TDS/10^6 \times n_{drift} \times D_{H2O} \times 0.0005$ tons/lb (Equation 2)

Where:

V = Cooling tower circulating water rate (gallon/minute)

60 = Conversion from minutes to hours

OH = Annual operating hours

TDS = Concentration of total dissolved solids in circulating water (ppm by weight) If unknown, use 11,500 ppm or a site specific TDS may be determined by sampling and laboratory analysis, as per AP-42, Section 13.4.

n_{drift} = Drift loss of circulating water (%). Use the manufacturer's specification for drift, or if unknown, then use default value of 0.02% for induced draft towers without drift eliminators, or 0.005% with drift eliminators; or use default value of 0.00088% for natural draft towers.

D_{H2O} = Density of water, 8.34 lb/gal

The "Page Identifier" box at the bottom of the form is provided as a place where you can enter your own identifier for each copy of this form among the other pages in your emissions inventory submittal.

Louisville Metro Air Pollution Control District

Form E44 - Wet Cooling Tower

Plant ID: | Emission Year:

Company Name:

Emission Unit ID:

Emission Process/Point ID:

Required Data					
Tower Name	**Tower Type** (Natural Draft or Induced Draft)	**Range of Total Dissolved Solids** (ppmw)	**Operating Schedule** (days/year) or (hours/year)	**Throughput** (1000 gallons/day) or (gallons/min)	**PM/PM10/PM2.5 filterable Emissions** (tons/year)
				Totals:	

Comments or explanations to clarify any data included on this page:

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